
LD 80: Call Trace

LD 80 provides a means of tracing a call by looking at a snap shot of the transient data (such as call register contents) associated with the call. The trace commands operate only when this Overlay is active. If LD 80 is aborted (***), the trace functions stop. Note that when using the enhanced trace commands, the Overlay will not automatically abort (according to the defined time-out period) if calls are being traced.

When a system initialization occurs, all trace commands are removed, and the trace operation is stopped.

For Network Call Trace see NCT messages.

X11 Release 19 and later include Enhanced Trace Commands. The enhanced trace function requires Multi-User Login functionality (package 242) to be enabled in LD 17. The enhanced commands are: DALL, DIST, ENTC, ENTD, GOTR, FITR, and STPT. These commands interact with each other only. They do not affect pre-Release 19 commands.

The enhanced trace commands can be disabled through a maintenance telephone by dialing the following: nn + 9913 + x + yy

Where:

- nn = customer SPRE access code
- 9913 = feature code to display for message display control
- x = action code (0 to deactivate)
- yy = message monitor code (02 for enhanced trace messages)

A second dial tone indicate that the command was successful. Overflow tone is heard if the command is entered incorrectly. Once this command has been entered, a user entering FITR from the TTY will receive the period (.) prompt.

Some loop-level commands are not valid on Option 11 systems, and have been replaced with slot-level commands.

When to use LD 80

There are three basic commands:

- TRAT for tracing attendant consoles
- TRAC for tracing sets and trunks
- TRAD for tracing calls through Computer PBX Interface (CPI), Digital Trunk Interface (DTI), Primary Rate Interface, or Digital Link Interface (DLI) loops.

The TRAC command can be used to print the tone detector TN if a tone detector is used at the time of the call trace.

Generic X11 enables the printing of auxiliary data related to a call. The auxiliary data consists of information associated with the NARS/BARS/CDP features, if equipped, and the Ring Again (RGA) feature. This additional data can be retrieved by appending DEV to any of the TRAC commands.

Example: TRAC L S C U DEV

Note: BRI DN's can be traced with the TRAC C DN command. For TRAC L S C U, enter U = DSL0 to DSL7 for Digital Subscriber Loops.

With X11 Release 23, when Music and Recorded Announcement Broadcast trunks are traced, the following information is printed out:

- indication that the trunk is broadcasting
- the number of callers connected to the trunk

When a caller connected to a broadcasting trunk is traced, the existing trace information is printed out as well as an indication that the trunk is broadcasting.

Originating and terminating information

The Call Trace originating and terminating party information depends on the types of telephone, console or trunk as shown below.

Single line telephones:

```

ORIG l s c u  cust dn 500
TERM l s c u  cust dn 500

```

Multi-line telephones:

```

ORIG l s c u  key# keytype cust dn settype
TERM l s c u  key# keytype cust dn settype

```

Attendant consoles

```

ORIG l s c u  cust att# lpk#  ATTN consoletype
TERM l s c u  cust att# lpk#  ATTN consoletype

```

Trunks:

```

ORIG l s c u  rtyp RMBR rrr mmm
TERM l s c u  rtyp RMBR rrr mmm

```

Where:

l s c u = TN

consoletype = console type (ATT, 1250, 2250)

cust = customer number

dn = directory number

key# = multi-line telephone key number

keytype = multi-line telephone key type (SCR, MCR, HOT, etc.)

lpk# = console loop key number

rrr mm = trunk route and member number

rtyp = trunk route type (TIE, CO, FX, etc.)

settype = multi-line telephone type (SL1, 2008, 2317, etc.)

Example 1

Trace a call placed to a 500-type set

Configuration: active call from key 0 on an M2008, to 500-type telephone

Customer number: 06

Originator:

telephone type: M2008

TN: 004 0 05 00

DN: 5100 on SCR key 0

Terminator:

telephone type: 500

TN: 008 0 03 06

DN: 2121

Trace command:

TRAC 4 0 5 0 (l s c u), or

TRAC 6 5100 (customer and DN)

Output:

ACTIVE TN 004 0 05 00

ORIG 04 0 0 05 00 6 SCR 0 5100 2008

TERM 008 0 03 06 6 2121 500

DIAL DN 2121

MAIN PM ESTD

TALKSLOT ORIG 22 TERM 22

QUEUE NONE

Example 2**Trace an outgoing ISDN call**

Configuration: outgoing call from key 0 on an M2317, to 500-type telephone
Customer number: 05

Originator:

telephone type: M2317
TN: 016 0 02 00
DN: 6050 on SCR key 0

Terminator:

Dialed DN: 7873107
Outgoing PRI TIE trunk: loop 018 channel 16; route 24 member 12

Trace command:

TRAC 5 6050 (customer, DN), or
TRAC 16 0 2 0 (l s c u)

Output:

```
ACTIVE  TN    016  0  02  00
ORIG     016  0  02  00      5  SCR 0    6050    2317
TERM      018  16      TIE  RMBR  24  12
DIAL DN   7873107
MAIN PM   ESTD
TALKSLOT  ORIG 13      TERM 13
QUEUE    NONE
----- ISDN PRA CALL (TERM) -----
CAL REF # = 16
BEARER CAP = VOICE
CALL STATE = 10      ACTIVE
CALLING NO = 4376050
CALLED NO  = 7873107
```

Example 3

Enhanced Trace command output

The enhanced call trace output includes a time stamp that appears on the first line of the output.

The TN or digital trunk prints out only when there has been a change to the call register. The TN or trunk is printed only once.

Sample output:

```
.14:00:02 12/25/1992

KEY 0 MCR MARP ACTIVE TN 001 0 02 01

ORIG 001 02 01 0 SCR MARP 1 5011 SL1

TERM 001 0 02 00 0 MCR MARP 1 5006 SL1

DIAL DN 5006

MAIN_PM ESTD

TALKSLOT ORIG 19 TERM 21

QUEU NONE

KEY 1 TRN IDLE

KEY 2 AO3 IDLE

.
.
.

KEY 8 RND

KEY 9 RLS

.14:00:04 12/25/1992

IDLE TN 015 04
```

Alphabetical list of Call Trace outputs

This section provides definitions of the data output by the various call trace commands.

With X11 Release 19 and later, a time stamp is added to Call Trace output. The following information is added below the time stamp as necessary.

- A digital telephone with no active call register shows:
IDLE TN l s c u
 - A locked out telephone or digital trunk shows:
LOCKOUT TN l s c u (or l ch)
 - A disabled telephone or digital trunk shows:
DSBL TN l s c u (or l ch)
 - A telephone or digital trunk that is in maintenance busy state shows:
MSBY TN l s c u (or l ch)
MSBY TN l s c u (or l ch) MARP shows if the TN is a MARP TN
- 1 ACTIVE — the call/key is active
 - 2 AUX_NARS — Network Automatic Route Selection (NARS) data to follow
 - 3 AUX_PM — auxiliary progress mark may be any of the following depending on the MAIN_PM:
 - a ABSORBING = performing digit manipulation on the call
 - b AWAIT ANI = waiting for Automatic Number Identification information
 - c AWAITREPLY = CPU is waiting for a response during a dial sequence
 - d BSYG = busy tone to originator
 - e CDR-CALLRECORD = CPU is outputting a CDR record
 - f CDR-TIMING = CPU is computing a CDR record
 - g COMPLETE = dialing is complete
 - h DNTRANS = DN translation to TN in progress
 - i FAREND-OFF = ?

- j** NARS = call is a network call
 - k** NOOUTPULS = outpulsing complete, originator receiving ringback
 - l** OUTPUTSING = outpulsing digits related to the call
 - m** OVLF = resources not available, returning overflow to originator
 - n** PAUSING = timed pause in a trunk call dialing sequence
 - o** SPEEDCALL = performing speed call
 - p** TEMPPATH = software timing, occurs when outpulsing digits on trunks
 - q** TOLLCHECK = checking access restrictions for the call
 - r** USCR = User Selectable Call Redirection programming, receiving dial tone
 - s** USCR_DIAL = USCR programming
-
- 4** AUX_RGAT_PM — Ring Again over trunk information
 - 5** BEARER CAP — bearer capability, such as voice, 64K clear, 64K restricted and 56K
 - 6** BUSY — unit or DN is busy
 - 7** CALL REF # — PRI call reference number assigned by the system
 - 8** CALL STATE — specifies the PRI call as active or inactive
 - 9** CALLED NO — PRI dialed number
 - 10** CALLING NO — PRI home location code and DN of originating party
 - 11** CONF — conference call

- 12** COS_ORIG, COS_TERM — class of service restrictions for originating and terminating party. Possible values are:
 - a** UNR = Unrestricted
 - b** TLD = Toll Denied
 - c** SRE = Semi-restricted
 - d** FRE = Fully Restricted
 - e** FR1 = Fully Restricted class 1
 - f** FR2 = Fully Restricted class 2
 - g** CUN = Conditionally Unrestricted
 - h** CTD = Conditionally Toll Denied
- 13** CSD — Confree Selectable Display Key
- 14** DARK_CONSOLE — the call is being temporarily released by a console. Also outputs three types of recall:
 - a** RLSED = console released the call is getting recall
 - b** FLASH = Flash recall
 - c** CAMP = Camp-On recall
- 15** DIAL DN— the dialed number
- 16** DIAL xxx yy TTR zz — TDS on loop xxx and timeslot yy connected to Digitone Receiver timeslot zz
- 17** DG_MAN xxx FCA_INDEX xxx TOD x — Digit Manipulation Index, Free Area Screening and Time Of Day value
- 18** DIRECT MW_CALL — Message Waiting indication is being given
- 19** DSBL — the unit has been disabled
- 20** DST — console destination information to follow
- 21** EMR100 — ACD emergency conference
- 22** EXP_ROUTE — identifies if an expensive route is being used for an ESN call
- 23** IDLE — TN or key is idle

- 24 HLD — number of calls On-Hold at the console
- 25 HOLD — call is On-Hold
- 26 LOCKOUT — the unit is in lockout state
- 27 LOOP — attendant console LPK key
- 28 MAIN_PM — this is the main progress mark which identifies the state of the call, possible values are listed below: (See also AUX_PM)
 - a BUSY = originator is receiving busy tone
 - b CDR = CPU is processing Call Detail Recording records
 - c DELAY DIAL = CPU is in a timing sequence while establishing a delay dial start trunk call
 - d DIAL = one or more digits have been dialed, system requires more digits
 - e ESTD = call is established between the originating and terminating party
 - f HALFDISC = Trunk with answer supervision has not received a disconnect signal from the far-end during trunk idling
 - g READY = CPU is ready to process a function for the originating TN
 - h REOR = originator is receiving intercept treatment
 - i RING = originator is receiving ringback tone
 - j WAIT = dial tone waiting queue
 - k WINKON = CPU is in a timing sequence while establishing a wink start trunk call
- 29 MARP — indicates the TN is Multiple Appearance Redirection Prime
- 30 MBSY — unit is in maintenance busy state
- 31 NARS_PM — NARS call progress mark
- 32 NEW_RLIST_INDEX NWQ_RLIST_ENTRY — network queue route list index and route list entry
- 33 NCOS_ORIG, NCOS_TERM — Network Class of Service for originating and terminating party

- 34** OHQ/CBQ — call is in the Off-Hook queue or Callback queue
- 35** OSN — On-Site Notification key
- 36** PRIORITY NWQ_EXT_ROUTE — the priority in the queue and extended route queuing
- 37** PTY SLOT — TDS priority timeslot; reserved by the CPU while a user is receiving tones (this timeslot may be required by the CPU to further process the call). Normally PTY SLOT is the same timeslot as SLOT.
- 38** QUEU — a call may be in one of the following CPU timing queues:
 - 128 = 128 ms timing queue
 - 2S = 2 second timing queue
 - CAD = cadence
 - CDR = Call Detail Recording processing queue
 - DIAL = dialing queue
 - IDLE = idle queue
 - NONE = call is not in a timing queue
 - RING = ringing queue
- 39** RCVR xx SET yy — timeslot to the Digitone Receiver (xx) and the telephone (yy)
- 40** RGAT_PM — Ring Again progress mark
- 41** RL_IND xx RL_ENT xx — NARS/BARS route list index and entry number
- 42** SRC — console source information to follow
- 43** SBSY — unit is software busy
- 44** SLOT — the timeslot used by the originator and terminator
- 45** TALKSLOT — identifies the timeslot and junctor (if applicable) used by the originator and terminator
- 46** TDTN — Tone Digit Switch loop and timeslot
- 47** TERM — originating party information, identifies the TN or DN where the call terminates, output depends on type of telephone or console

48 TGAR_ORIG, TGAR_TERM — Trunk Group Access Restriction for originating and terminating party

49 TTR = Digitone Receiver TN

Basic commands

DALL	Disable all enhanced trace commands.
DIST n	Disable the enhanced trace operation.
ENTC l s c u t	Enable the enhanced trace command for a TN.
ENTD l c h t	Enable the enhanced trace command for a digital trunk.
FITR	Get information about the enhanced trace function.
GOTR	Begin enhanced trace commands. This command starts the trace operation specified with the ENTC and ENTD commands.
STPT	Stop the enhanced trace command.
TRAC c acod	List route number, type and status of each trunk for customer c
TRAC c dn	Trace calls for customer c Directory Number or Local Steering Code dn
TRAC c r m	Trace calls, customer c, route r, member m
TRAC l s c DSLx	Trace calls on Digital Subscriber Loop x (0-7)
TRAC l s c u	Trace calls associated with this unit
TRAC l s c u k	Trace calls associated with key k on specified unit
TRAC x yyyy	Trace using customer number as DN
TRAC xx...xx DEV	Print auxiliary data
TRAC zzzz	Trace using TN of the set to be traced
TRAD loop ch	Trace DTI or DLI calls, channel ch of loop
TRAT c a	Trace calls, attendant a of customer c
TRAT c a k	Trace calls associated with key k of attendant console a for customer c
TRAT l s c u	Trace attendant calls, this unit
TRAT l s c u k	Trace attendant calls on key k
TRAT xx...xx DEV	Print auxiliary data

Option 11 commands

On an Option 11 system, some loop-level commands are replaced with slot-level commands. Valid commands for these systems are shown here:

TRAC c acod	List route number, type and status of each trunk under customer c
TRAC c dn	Trace calls for customer c Directory Number or Local Steering Code dn
TRAC c r m	Trace calls for customer c, route r, member m
TRAD c ch	Trace digital calls, channel ch of card c
TRAD loop ch	Trace DTI calls, channel ch of loop
TRAK c u	Trace calls associated with this unit
TRAK c u k	Trace calls associated with key k on the specified unit
TRAO c u	Trace attendant calls, this unit
TRAO c u k	Trace attendant calls on key k of unit
TRAO xx...xx DEV	Print auxiliary data
TRAT c a	Trace calls for attendant a of customer c
TRAT c a k	Trace calls associated with key k of attendant console a for customer c

Alphabetical list of commands

Command	Description	Pack/Rel
DALL	Disable all enhanced trace commands. This command disables all trace commands enabled with ENTC or ENT D command. You must stop the trace with the STPT command before disabling all the commands with DALL.	basic-19
DIST n	Disable the enhanced trace operation. This command disables the trace command enabled with ENTC or ENT D command. This command is used once a trace command is started then stopped. Where: n = the entry number (as seen with the FITR command)	basic-19
ENTC l s c u t	Enable the enhanced trace command for a TN. This command enables the trace capability for the TN specified. Note that this command does not start the trace immediately. Use the GOTR command to begin the trace operation. Where: l = loop, s = shelf, c = card, u = unit and t = the length of time the trace command operates. The format for the trace command duration (t) is HHMM, where HH = hours (0-23) and MM = minutes (0-59). For example, for a duration of 5 minutes, t = 0005; for 1 hour, t = 0100 The time duration must be at least 1 minute, and no more than 23 hours.	basic-19
ENTD l ch t	Enable the enhanced trace command for a digital trunk. This command enables the trace capability for the TN specified. Note that this command does not start the trace immediately. Use the GOTR command to begin the trace operation. Where: l = loop, s = shelf, c = card, u = unit and t = the length of time the trace command operates. The format for the trace command duration (t) is HHMM, where HH = hours (0-23) and MM = minutes (0-59). For example, for a duration of 5 minutes, t = 0005; for 1 hour, t = 0100. The time duration must be at least 1 minute, and no more than 23 hours.	basic-19

FITR	Get information about the enhanced trace function. This command queries the TNs or Digital trunks being traced with the ENTC and ENTND commands. The output is shown as follows: <table><tr><th>ENTRY</th><th>TN or TRUNK</th><th>TIME</th><th>STATUS</th></tr><tr><td colspan="4">For example:</td></tr><tr><td>1</td><td>01 0 01 01</td><td>0030</td><td>OFF</td></tr><tr><td>2</td><td>015 04</td><td>1200</td><td>OFF</td></tr></table>	ENTRY	TN or TRUNK	TIME	STATUS	For example:				1	01 0 01 01	0030	OFF	2	015 04	1200	OFF	basic-19
ENTRY	TN or TRUNK	TIME	STATUS															
For example:																		
1	01 0 01 01	0030	OFF															
2	015 04	1200	OFF															
GOTR	Begin enhanced trace commands. This command starts the trace operation specified with the ENTC and ENTND commands.	basic-19																
STPT	Stop the enhanced trace command. This command stops the enhanced trace operation specified with the ENTC and ENTND commands. This can be used at any time during the trace operation. This does not disable the commands; they can be restarted with the GOTR command. When they are restarted, the duration timer is reset. For example: the timer is set at 30 minutes, but the trace is stopped after 2 minutes. When the trace is restarted (GOTR) the timer is set to 30 minutes.	basic-19																
TRAC c acod	List route number, type and status of each trunk for customer c.	basic-1																
TRAC c dn	Trace calls for customer c Directory Number or Local Steering Code dn.	basic-1																
TRAC c dn	Trace calls, this dn of customer c.	basic-1																
TRAC c r m	Trace calls, customer c, route r, member m.	basic-1																
TRAC l s c DSLx	Trace calls on Digital Subscriber Loop x (0-7).	bri-18																
TRAC l s c u	Trace calls associated with this unit. If a trace is performed on a DTR, an error message is output.	basic-1																
TRAC l s c u k	Trace call associated with key k on specified unit.	basic-1																
TRAC x yyyy	Trace using customer number as DN. Where : x = customer number of the set to be traced and yyyy = DN of the key to be traced.	nxcc-22																

TRAC xx...xx DEV	Print the auxiliary data related to the call for Network Alternate Route Selection (NARS), Basic Alternate Route Selection (BARS), Coordinated Dialing Plan (CDP) or Ring Again (RGA), where equipped, as well as the normal data for command xx...xx. Command xx...xx can be any of the TRAC commands. When TYP E is output, E = extended route (not expensive).	nxcc-22
TRAC zzzz	Trace using TN of the set to be traced. Where : zzzz = TN of the set to be traced.	nxcc-22
TRAD loop ch	Trace DTI or DLI calls, channel ch of specified loop.	basic-1
TRAD c ch	Trace digital calls, channel ch of card c. (Option 11)	
TRAK c u	Trace calls associated with this unit. (Option 11)	basic-1
TRAK c u k	Trace calls associated with key k on the specified unit. (Option 11)	basic-1
TRAO c u	Trace attendant calls, this unit. (Option 11)	basic-1
TRAO c u k	Trace attendant calls on key k of unit. (Option 11)	basic-1
TRAO xx...xx DEV	Print auxiliary data. (Option 11)	basic-1
TRAT c a	Trace calls for customer c, attendant a.	basic-1
TRAT c a k	Trace calls associated with key k of attendant console a for customer c.	basic-1
TRAT l s c u	Trace attendant calls, this unit.	basic-1
TRAT l s c u k	Trace attendant calls on key k.	basic-1
TRAT xx...xx DEV	Print auxiliary data. Print the auxiliary data related to the call for Network Alternate Route Selection (NARS), Basic Alternate Route Selection (BARS), Coordinated Dialing Plan (CDP) or Ring Again (RGA), where equipped, as well as the normal data for command xx...xx. Command xx...xx can be one of the TRAT commands.	basic-1
